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## Virtual Reality in education and for employability

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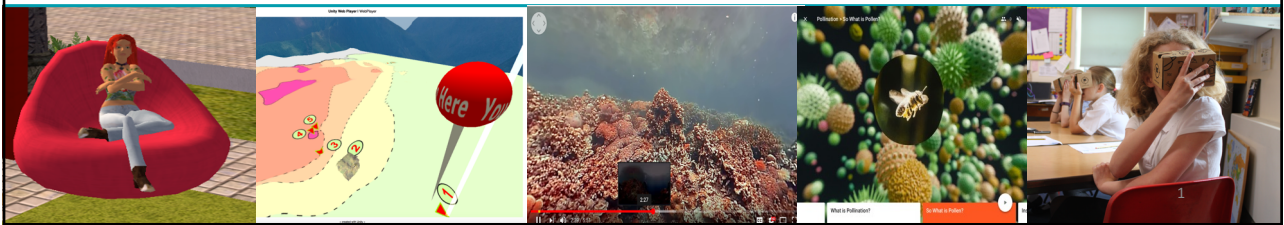
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# Virtual reality in education and for employability

Shailey Minocha and Ana-Despina Tudor

13 December 2017



## Introductions

Shailey Minocha



Ana-Despina Tudor



## 3D virtual environments and virtual reality



Second  
Life



Virtual Skiddaw:  
3D Geology Field  
Trips (Unity 3D)



360-degree  
videos in the  
browser



Mobility



Virtual reality  
viewers

## 'As if I have met you'



“...I get a feeling of meeting you face-to-face...even though I engage with avatars, I am aware that behind them there is a real person...”

## Realistic and non-realistic spaces

Realistic space



Non-realistic space



“ I think students can't deal with the whole space. Each learning scenario works if it is task oriented. Students obviously would need to know where to be and what is expected of them. ”

## Reconstructing reality





## Preparing for the real world



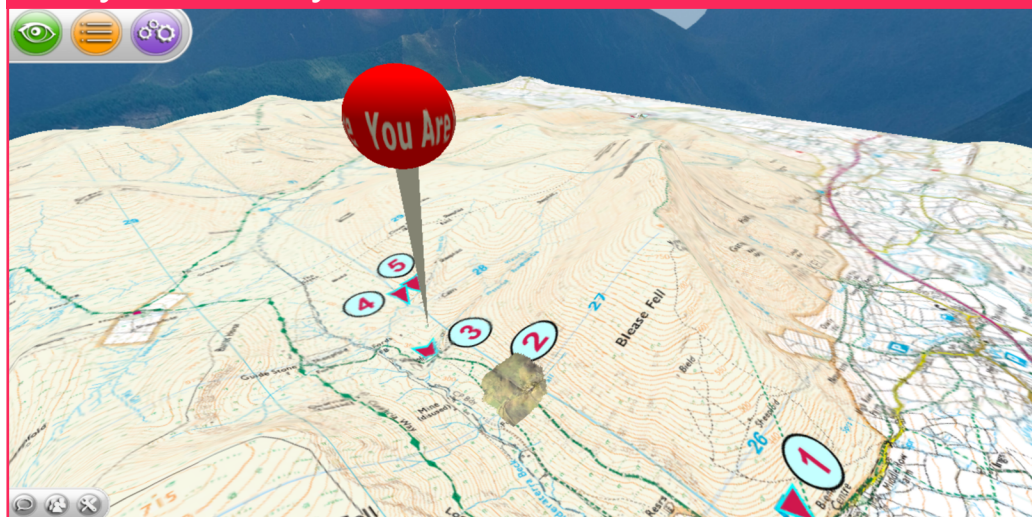
## Lab in the field



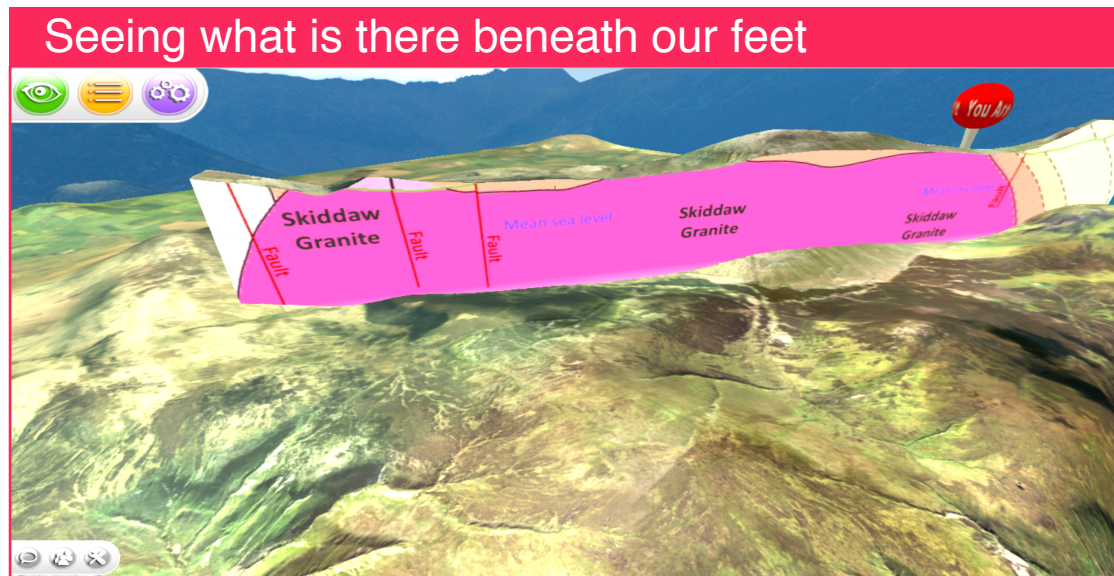
## On-the-spot analysis



## Beyond reality







## 360-degree videos in the Chrome browser



VR in brain surgery

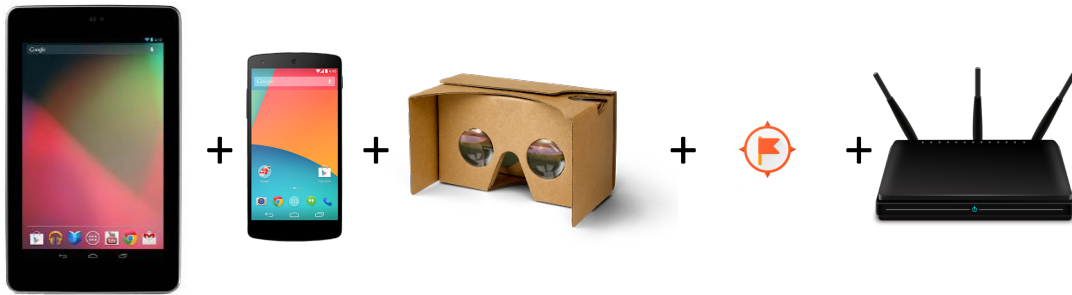
<https://www.youtube.com/watch?v=1H9qNaP0W9o>



Ocean: A 360-degree tour of the mysterious, magical corals of Palau;  
The Economist

<https://www.youtube.com/watch?v=jvtvFHPRcsY>

## Google Expeditions kit



Tablet

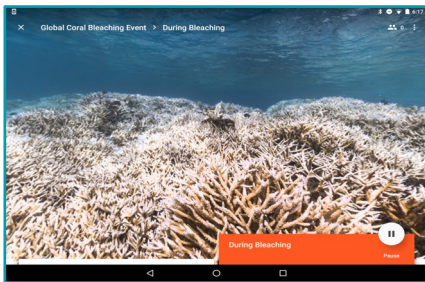
Smartphone

Cardboard Viewer

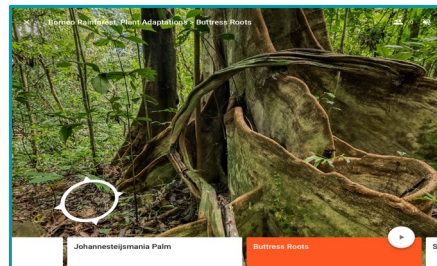
Google Expeditions App

Router

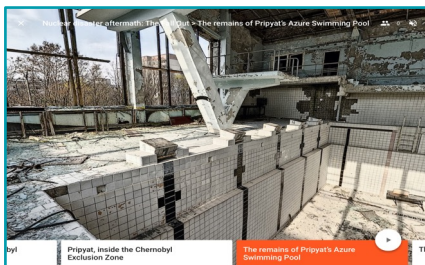
## Virtual field trips



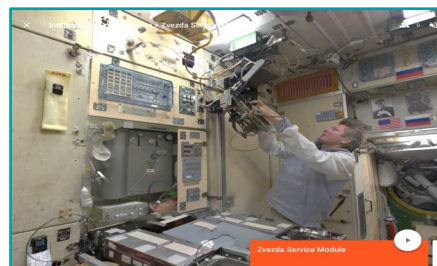
The Great Barrier Reef - bleaching event



Borneo Rainforest – buttress roots

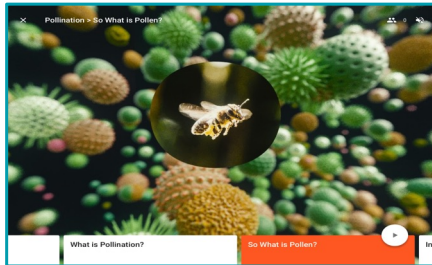


Chernobyl

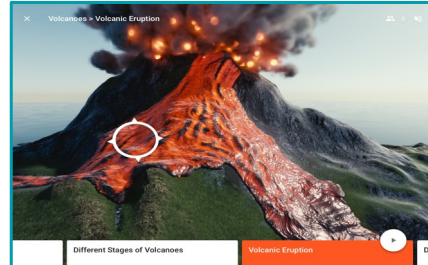


International Space Station

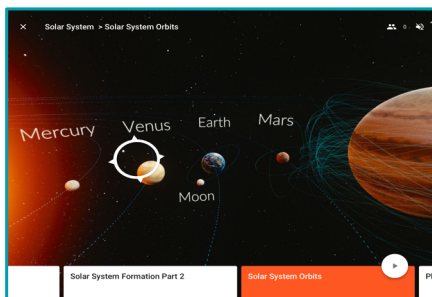
## Simulations, career expeditions



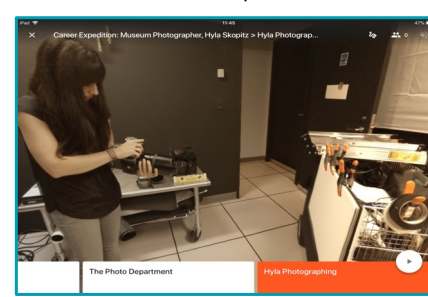
Process of pollination



Volcanic eruption

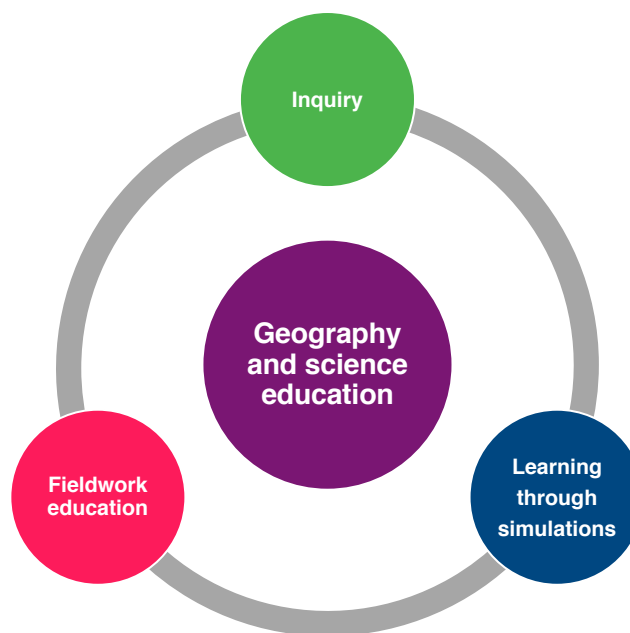


Solar system



Museum photographer

## Google Expeditions – mobile virtual reality





## Local to global – and – global to local

Local to global



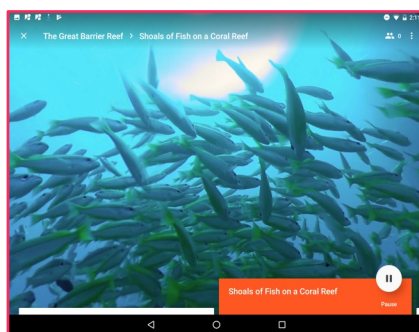
Global to local



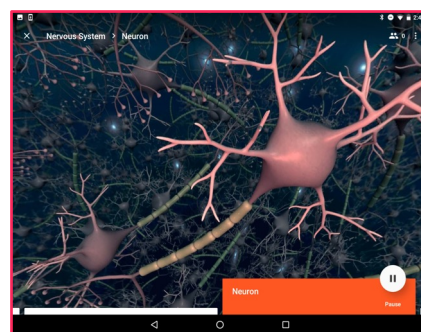
“ It helped me to understand the Chilterns is an area of natural beauty compared to some places in the world It helped me to feel more caring about the Chilterns. ”

## Experiencing the invisible

Real places



Simulations



“ The virtual reality helped me because I could see for myself what was happening without having to imagine it. ”

## Formulating questions

### Higher-order question:

“Can the colour of the coral before it’s been drained come back?”  
(Year 8, Geography, Climate Change and The Great Barrier Reef Expeditions)

### Educator’s comment:

“You’d need to explain why, the fact that it was variable on the coral. It links to the idea of resilience” (Geography teacher)

### Higher-order question:

“How did the mangrove leaves adapt to take in the salt?”  
(Year 10, Geography, Borneo: Plant Adaptations Expedition)

### Educator’s comment:

“That’s really interesting because they’re asking why now. They know they do, now they want to know how” (Geography teacher)

## Affordances of Google Expeditions



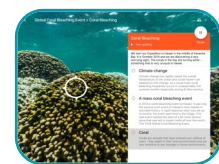
360-degree  
visual authenticity



360-degree  
navigation



3D view



Emphasis and  
In-situ contextual  
information



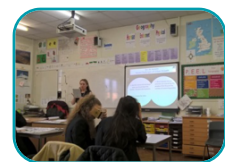
First-person  
perspective



Near view



Single-user  
handling



Synthesis

## Employability

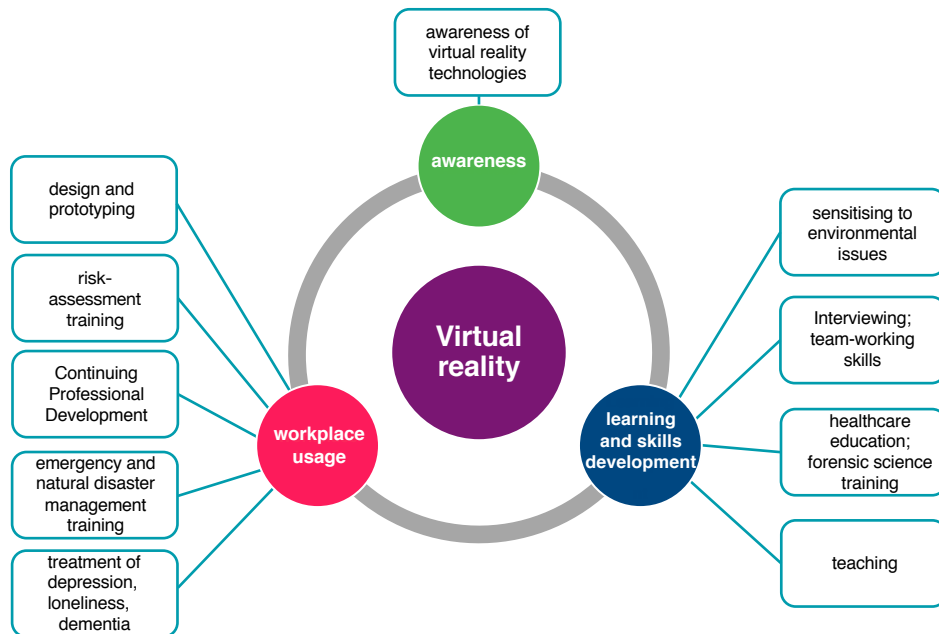
“ A set of capabilities and achievements that support students in developing their careers, raising their aspirations and enhancing their contribution to society. ”

*The Open University Student Employability Policy Statement*

## Virtual reality and employability



## Virtual reality and employability



## Questions and comments

